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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,298	09/11/2003	Alexander Pakhomov		3564

7590 05/11/2005  
Ilya Zborovsky  
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EXAMINER

LOBO, IAN J

ART UNIT PAPER NUMBER

3662

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/659,298

**Applicant(s)**

PAKHOMOV ET AL.

**Examiner**

Ian J. Lobo

**Art Unit**

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith ('897, '854) when taken in view of Bennett ('117).

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liebermann ('446) when taken in view of Bennett ('117).

Liebermann discloses a capacitive-type pressure sensitive transducer (hydrophone) that includes a first immovable plate (1), a pre charged non-conductive membrane (4) and a movable plate or diaphragm (2). Similarly, Smith discloses a capacitive-type pressure sensitive transducer that includes a first immovable plate (3), a pre charged non-conductive membrane (7) and a movable plate or diaphragm (2).

The difference between claim 1 and the Liebermann or Smith structures is the claim specifies a mass-increasing element formed as a lug attached to the movable plate or diaphragm.

Bennett teaches (see especially col. 3, lines 20-29) using an additional seismic mass (lug) placed upon a movable diaphragm to provide greater sensitivity for the sensor.

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Thus, in view of the teaching of Bennett, it would be obvious to one of ordinary skill in the art to modify Liebermann or Smith by including a mass or lug upon the movable plate or diaphragm so as to increase the sensitivity of the sensor. Claim 1 is so rejected.

Dependent claims 4 and 5 are further provided by the Smith patents.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liebermann or Smith when taken in view of Bennett, as applied to claim 1 above, and further in view of Hepp ('298) and Sanchez ('423).

Hepp teaches (col. 5, line 61 – col. 6, line 2) that it is common to shield seismic sensors from electromagnetic interference by using a stainless steel casing.

Claims 6 and 7 specify a double shield of nickel and copper.

Sanchez teaches a double shield arrangement of nickel and copper for protecting an electronic device from electromagnetic interference.

In view of the well know use of emi shielding in seismic detectors, as disclosed by Hepp, and the advantageous use of a double shield, as taught by Sanchez, it would be obvious to one of ordinary skill in the art to further modify Smith or Liebermann to include a double shield of nickel and copper for achieving emi suppression.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 specifies that the lug is formed as a one piece integral element "having a transverse size which is only a fraction of a transverse size" of the flexible diaphragm. However, the specification does not detail any specifics on the dimensions of the lug with respect to the diaphragm.

Further, the claim specifies that the lug transverse size is a "fraction" of the diaphragm transverse size. However, this, too, is not disclosed with any specificity.

### ***Response to Arguments***

7. Applicant's arguments filed February 18, 2005 have been fully considered but they are not persuasive.

Applicant first argues that the acoustic transducers or receivers of Smith and Liebermann are not seismic sensors, as claimed. This argument is not convincing since seismic sensors and hydrophones (Liebermann) or microphones are all classified as acoustic sensors or pressure sensitive sensors. Hydrophones and microphones detect pressure within an underwater environment and air, respectively, and seismic sensors detect pressure variations within a land formation. One of ordinary skill in the art would

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not find there to be a patentable distinction between seismic sensors and microphones or hydrophones since they all detect acoustic waves, only in different environments.

Applicant further argues against the Bennett reference individually. However one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Specifically, in view of the teachings of Bennett, it would have been obvious to one of ordinary skill in the art to modify Liebermann or Smith to include a mass or lug upon the movable plate or diaphragm so as to increase sensitivity of the sensor.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

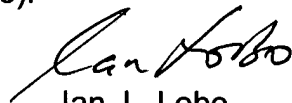
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian J. Lobo whose telephone number is (571) 272-6974. The examiner can normally be reached on Monday - Friday, 6:30 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ian J. Lobo  
Primary Examiner  
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